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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,076	12/19/2000	James D. Thornton	D/99578	4563

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EXAMINER	
ZHEN, LI B	

ART UNIT	PAPER NUMBER
2194	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/740,076	THORNTON ET AL.	
	Examiner	Art Unit	
	Li B. Zhen	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-12 and 17-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-12 and 17-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/01;1/17/06;3/06*; 1/30/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 2, 4 – 12 and 17 – 30 are pending in the current application.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/20/2006 has been entered.

Response to Arguments

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1, 2, 4 – 12 and 17 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,009,455 to Doyle [cited in the IDS submitted 03/22/2006] in view of U.S. Patent No. 7,003,547 to Hubbard.**

6. As to claim 1, Doyle teaches the invention substantially as claimed including a job management apparatus [master computer 5, Fig. 2a; col. 3, lines 42 – 58] for use in a batch job execution system [calculate the number of computation segments in the job request; col. 5, line 63 – col. 6, line 17] including a plurality of service providers [client

computers; col. 4, lines 10 – 29] in communication with the job management apparatus [Each available client sends an availability signal 16 via the network to the master control program; col. 4, lines 10 – 29], the apparatus comprising:

a client communications part which receives a batch job from a client [A job request means 1 provides a calculation initiation signal 2 to an application-specific master program 6 running in a master computer 5; col. 3, lines 5 – 25];

an extracting part which extracts one or more task from the batch job [application-specific master program is designed to partition the calculation indicated in the job request signal into multiple segments.; col. 3, lines 5 – 25]; and,

an assigning part which receives a request work signal from each of the plurality of service providers that is available to perform work for the batch job execution system [two available clients 17 have been qualified by the master control program's qualification algorithm 45 and assigned segment group packages 19 by the assignment algorithm 46. The available clients then become selected clients 20; col. 6, lines 17 – 30], each request work signal informing the assigning part of one or more function or service that the service provider can perform [primary function of the availability algorithm is to notify the master computer that the client is available... evaluate the existence and configuration of various predetermined resources on the client computer; col. 3, line 58 – col. 4, line 12];

wherein the assigning part delegates each task to one of the service providers that can perform the function or service required to perform the task [Each selected client is controlled by sending commands and files 21 from the master control program to the client control program over the network. Each selected client is downloaded with the job request files 18 included in the segment group package 19 whose contents are based on the job request signal 40; col. 6, lines 17 – 30]; and

wherein the assigning part sends an idle assignment signal to each service provider from which the request work signal is received but for which there is not a task available from the job management apparatus [If the master control program has no work for the available client, an optional idle response (not shown) may be sent; col. 4, lines 10 – 29], the idle assignment signal informing the service provider to not send

further request work signals to the assigning part until the service provider receives a work available signal from the assigning part [Each selected client is controlled by sending commands and files 21 from the master control program to the client control program over the network; col. 6, lines 15 – 30]. As to freeing up resources on each of the service providers for which there is not a task available, examiner notes that the client in response to the idle response from the master will not have work to perform; therefore, it will free up the resources of the client. Although Doyle teaches the invention substantially, Doyle does not teach a service provider that performs other tasks not delegated by the job management apparatus.

However, Hubbard teaches determining the capabilities of distributed devices [col. 4, lines 23 – 47], assigning workloads to the distributed devices [col. 15, lines 38 – 55], and a service provider that performs other tasks not delegated by the job management apparatus [workloads 130 and the results 132, or other tasks of the server systems 104, may be processed and handled by out-sourced host systems 340; col. 12, lines 33 – 50].

7. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Doyle to incorporate the feature of a service provider that performs other tasks not delegated by the job management apparatus as taught by Hubbard because this identifies the capabilities of distributed devices connected together through a wide variety of communication systems and networks and provides capability-based incentives to aggregate these distributed device capabilities to accomplish processing, storage, broadcasting or any other desired project objective [col. 2, line 65 - col. 3, line 5 of Hubbard].

8. As to claim 9, Doyle as modified teaches a batch job execution system [calculate the number of computation segments in the job request; col. 5, line 63 – col. 6, line 17 of Doyle] for communicating with at least one client [client computers; col. 4, lines 10 – 29 of Doyle], comprising:

a job management apparatus [master computer 5, Fig. 2a; col. 3, lines 42 – 58 of Doyle] in communication with the clients [client computers; col. 4, lines 10 – 29 of Doyle]

which receives a batch job from a client [A job request means 1 provides a calculation initiation signal 2 to an application-specific master program 6 running in a master computer 5; col. 3, lines 5 – 25 of Doyle], extracts a task from the batch job [application-specific master program is designed to partition the calculation indicated in the job request signal into multiple segments.; col. 3, lines 5 – 25 of Doyle], and assigns the task [application-specific master program is designed to partition the calculation indicated in the job request signal into multiple segments.; col. 3, lines 5 – 25 of Doyle];

a job database in communication with the job management apparatus which stores the batch job [workload database 308, Fig. 3A; col. 10, lines 45 – 66 of Hubbard];

a plurality of service providers [client computers; col. 4, lines 10 – 29 of Doyle] in communication with the job management apparatus which receive the assigned task [Each selected client is downloaded with the job request files 18 included in the segment group package 19 whose contents are based on the job request signal 40; col. 6, lines 17 – 30 of Doyle], perform the task [issues a command to the client control program 12 to execute the job computation module 14 with a compute parameter list 31; col. 6, lines 45 – 56 of Doyle], and return a result to the job management apparatus [After all group results 22 have been computed and the associated output files uploaded from the selected clients; col. 6, line 65 – col. 6, line 25 of Doyle]; and,

a plurality of provider managers [job computation module 14; col. 9, lines 23 – 40 of Doyle] in communication with the job management apparatus and in communication with a corresponding subset of the plurality of service providers which monitors the tasks being performed on the service providers and provides status information to the job management apparatus [After the CALCULATE script line is executed, subsequent SubmitterTick messages cause a job status message to be returned; col. 9, lines 23 – 40 of Doyle], wherein at least one of said subset of the plurality of service providers includes multiple service providers [client computers; col. 4, lines 10 – 29 of Doyle].

9. As to claim 17, Doyle as modified teaches a method for preparing and executing a batch job by a batch job execution system [calculate the number of computation

segments in the job request; col. 5, line 63 – col. 6, line 17 of Doyle], comprising the steps of:

submitting a batch job [A job request means 1 provides a calculation initiation signal 2 to an application-specific master program 6 running in a master computer 5; col. 3, lines 5 – 25 of Doyle] with processing parameters to a job management apparatus [compute parameter list 31; col. 8, lines 11 – 38 of Doyle];

storing the batch job in a job database [workload database 308, Fig. 3A; col. 10, lines 45 – 66 of Hubbard];

receiving a work request signal from each of a plurality of service providers that is available to perform work for the batch job execution system, each work request signal informing the job management apparatus of one or more function or service that the service provider can perform [primary function of the availability algorithm is to notify the master computer that the client is available... evaluate the existence and configuration of various predetermined resources on the client computer; col. 3, line 58 – col. 4, line 12 of Doyle];

determining whether the batch job execution system is able to process the batch job [qualification algorithm 45 in the master control program determines if an available client is a candidate to participate in a distributed computation; col. 4, lines 10 – 29 of Doyle];

extracting at least one task from the batch job [application-specific master program is designed to partition the calculation indicated in the job request signal into multiple segments.; col. 3, lines 5 – 25 of Doyle];

delegating each task to one of the service providers that can perform the function or service required to perform the task [Each selected client is controlled by sending commands and files 21 from the master control program to the client control program over the network. Each selected client is downloaded with the job request files 18 included in the segment group package 19 whose contents are based on the job request signal 40; col. 6, lines 17 – 30 of Doyle]; and

sending an idle assignment signal to each service provider from which the request work signal is received but for which there is not a task available from the job

management apparatus [If the master control program has no work for the available client, an optional idle response (not shown) may be sent; col. 4, lines 10 – 29 of Doyle], the idle assignment signal informing the service provider to not send further request work signals to the job management apparatus until the service provider receives a work available signal from the job management apparatus [Each selected client is controlled by sending commands and files 21 from the master control program to the client control program over the network; col. 6, lines 15 – 30 of Doyle], thereby freeing up resources of each service provider for which there is not a task available from the job management apparatus [examiner notes that the client in response to the idle response from the master will not have work to perform; therefore, it will free up the resources of the client] to perform other tasks not delegated by the job management apparatus [workloads 130 and the results 132, or other tasks of the server systems 104, may be processed and handled by out-sourced host systems 340; col. 12, lines 33 – 50 of Hubbard]; and

sending a work available signal to each server provider that was previously sent the idle assignment signal but for which a task is available from the job management apparatus [Each selected client is controlled by sending commands and files 21 from the master control program to the client control program over the network; col. 6, lines 15 – 30 of Doyle].

10. As to claim 24, Doyle as modified teaches an article of manufacture including an information storage medium wherein is stored information comprising:

a client communications software component which receives a batch job from a client [A job request means 1 provides a calculation initiation signal 2 to an application-specific master program 6 running in a master computer 5; col. 3, lines 5 – 25 of Doyle];

an extracting software component which extracts one or more task from the batch job [application-specific master program is designed to partition the calculation indicated in the job request signal into multiple segments.; col. 3, lines 5 – 25 of Doyle]; and,

an assigning software component which receives a request work signal from each of a plurality of service providers that is available to perform work, each request work signal informing the assigning part of the function or service that the service provider performs [primary function of the availability algorithm is to notify the master computer that the client is available... evaluate the existence and configuration of various predetermined resources on the client computer; col. 3, line 58 – col. 4, line 12 of Doyle];

wherein the assigning part delegates each task to one of the service providers that can perform the function or service required to perform the task [Each selected client is controlled by sending commands and files 21 from the master control program to the client control program over the network. Each selected client is downloaded with the job request files 18 included in the segment group package 19 whose contents are based on the job request signal 40; col. 6, lines 17 – 30 of Doyle]; and

wherein the assigning part sends an idle assignment signal to each service provider from which the request work signal is received but for which there is not a task available from the assigning software component [If the master control program has no work for the available client, an optional idle response (not shown) may be sent; col. 4, lines 10 – 29 of Doyle], the idle assignment signal informing the service provider to not send further request work signals until the service provider receives a work available signal from the assigning software component [Each selected client is controlled by sending commands and files 21 from the master control program to the client control program over the network; col. 6, lines 15 – 30 of Doyle], thereby freeing up resources of each service provider [examiner notes that the client in response to the idle response from the master will not have work to perform; therefore, it will free up the resources of the client] for which there is not a task available from the assigning software component to perform other tasks not delegated by the assigning software component [workloads 130 and the results 132, or other tasks of the server systems 104, may be processed and handled by out-sourced host systems 340; col. 12, lines 33 – 50 of Hubbard].

11. As to claim 2, Doyle as modified teaches the plurality of service providers are operating on a plurality of machines [client computers; col. 4, lines 10 – 29 of Doyle].

12. As to claim 4, Doyle as modified teaches at least one contact part which receives a status report signal from the service providers, which updates the status of the task being performed by the service provider [After the CALCULATE script line is executed, subsequent SubmitterTick messages cause a job status message to be returned; col. 9, lines 23 – 40 of Doyle].

13. As to claim 5, Doyle as modified teaches the work request signal specifies a minimum frequency at which the status report signal will be sent to the contact part [col. 9, lines 8 – 25 of Doyle].

14. As to claim 6, Doyle as modified teaches the status report signal informs the contact part of completion of the task [col. 9, lines 25 – 40 of Doyle].

15. As to claim 7, Doyle as modified teaches a job database which stores the batch job upon receipt from the client as jobs are executed by batch job execution system [col. 6, lines 55 – 65 of Doyle].

16. As to claim 8, Doyle as modified teaches retrieving part, which retrieves the batch job from the job database when the batch job is to be executed [col. 10, lines 45 – 66 of Hubbard].

17. As to claim 10, Doyle as modified teaches the provider manager in response to a request to increase capacity from the job management apparatus assigns additional service providers to receive tasks from the job management apparatus [col. 9, line 57 – col. 10, line 10 of Hubbard].

18. As to claim 11, Doyle as modified teaches if the service provider fails to complete its assigned task within a predetermined time, the corresponding provider manager communicates with the service provider, and informs the job management apparatus of the task status in response to the communication with the service provider [col. 6, line 65 – col. 7, line 15 of Doyle].

19. As to claim 12, Doyle as modified teaches the provider manager informs the service provider performing the task to terminate performance of the task in response to a signal received from said job management apparatus [col. 6, line 65 - col. 7, line 15 of Doyle].

20. As to claim 18, Doyle as modified teaches retrieving the batch job from the batch job database prior to the step of extracting at least one task [col. 19, lines 50 – 65 of Hubbard].

21. As to claim 19, Doyle as modified teaches delegating a plurality of tasks to the plurality of service providers to be performed in parallel [col. 14, line 57 – col. 15, line 5 of Hubbard].

22. As to claim 20, Doyle as modified teaches receiving a status report signal from the service provider performing the task, which updates the status of the task being performed [After the CALCULATE script line is executed, subsequent SubmitterTick messages cause a job status message to be returned; col. 9, lines 23 – 40 of Doyle].

23. As to claim 21, Doyle as modified teaches determining whether the batch job execution system is able to process the batch job and assigning additional service providers to perform tasks for the job management apparatus if it is determined that the batch job execution system is unable to process the job [col. 10, lines 46 – 58 of Doyle].

24. As to claim 22, Doyle as modified teaches communicating with the service provider performing the task after a predetermined time [response to periodic incoming SubmitterTick message; col. 9, lines 8 – 25 of Doyle]; informing the job management apparatus of the tasks status [col. 9, lines 25 – 40 of Doyle]; and, the job management apparatus determining whether to re-assign the task or wait for task completion in response to the step of updating the task status [col. 6, line 65 – col. 7, line 15 of Doyle].

25. As to claim 23, Doyle as modified teaches terminating the step of performing the task in response to receiving a signal from the job management apparatus, prior to the step of completing the task [col. 6, line 65 - col. 7, line 15 of Doyle].

26. As to claim 25, Doyle teaches the assigning software component monitors which service providers are able to perform a task [evaluate the existence and configuration of various predetermined resources on the client computer; col. 3, line 58 – col. 4, line 12 of Doyle].

27. As to claim 26, this is rejected for the same reasons as claim 4 above.

28. As to claim 27, this is rejected for the same reasons as claim 5 above.

29. As to claim 28, Doyle as modified teaches a job database software component which stores the batch job upon receipt from the client, wherein the client communications software component is in communication with the job database software component [workload database 308, Fig. 3A; col. 10, lines 45 – 66 of Hubbard].

30. As to claim 29, this is rejected for the same reasons as claim 8 above.

31. As to claim 30, Doyle as modified teaches at least one provider manager software component [job computation module 14; col. 9, lines 23 – 40 of Doyle] in

communication with the plurality of service providers which monitors the tasks being performed on the service providers and provides status information to the job management software component [col. 9, lines 23 – 40 of Doyle].

CONTACT INFORMATION

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on 571-272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Examiner
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lbz

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